

ANNUAL REPORT

OF THE

SANITARY CONDITION

OF THE

Thorne Rural District

For the Year 1913,

BY

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*To the Chairman and Members of the Thorne Rural
District Council.*

MR. CHAIRMAN AND GENTLEMEN,

I beg to submit to you my thirty-seventh Annual Report of the health and sanitary condition of your District, together with tables of infectious sickness and mortality, for the year ended December 31st, 1913, as required by the Local Government Board.

Physical features and general character of the District.—The Rural District of Thorne is a low-lying, fairly level tract, lying between Goole Rural on the north, and Doncaster Rural on the west and south, while its eastern boundary abuts upon Lincolnshire, and having a total area of about 38,486 acres. Two canals and the tidal River Don (Dutch River) run through the District, and the District is served by three railways, one of these being a light railway serving part of Hatfield parish.

In ancient times the District was a swampy waste, forming part of the royal forest of Hatfield Chase; but in the 17th century it was drained by the Dutchman, Vermuyden, and converted into fertile, mostly arable, land. Within recent years wide drains have been cut for the drainage of the land, and steam pumping engines erected for getting rid of the excess of water. The main agricultural drainage is under the superintendence of the Hatfield Chase Commissioners.

The District occupies a part of two river basins—the Don, draining Fishlake and Sykehouse; and the Trent, which drains Hatfield by means of the Cateline and North Idle Drains: whilst Thorne and Stainforth occupy a portion of each drainage area. The river Don enters the District near Bramwith and flows in a north-easterly direction through Stainforth and Fishlake to the north side of Thorne, whence it passes north to the Goole Rural District. In this part of its course the river is tidal.

One of the two canals passes across the District from east to west through Stainforth and Thorne, the other canal passes only through Sykehouse and Fishlake parishes.

Geologically the District rests upon the new red sandstone, with coal measures underneath. The sandstone is more or less covered up by a series of post-tertiary beds, the usual sequence of which is as follows :—

- (1) Warp, a loam deposited from the river water by natural or artificial agency.
- (2) Peat, with the remains of an ancient forest at the base.
- (3) Sand.
- (4) Strong laminated Clay.
- (5) Gravel and Sand.

Social Conditions.—The inhabitants of the District are very largely occupied in agriculture, while on the Moors, which are extensive, peat cutting gives occupation to a considerable number of men. Many of the Watermen who work the keels up and down the canals reside in Thorne and Stainforth.

About four years ago sinking operations were commenced at the Thorne Colliery and about two and a half years ago a commencement was made of sinking shafts near Stainforth Railway Station. Other industries in the District are ship-building, brewing, and brick-making.

It is understood that considerable progress is being made at both Collieries and there is little doubt that before many years have passed the population of the District will have enormously increased, and, from being almost a purely agricultural area, it will become an important mining centre.

The amount of poor-law relief given in the District during the last four years was as under :—

1910 (before Old Age Pensions)	...	£1132	2	9
1911 (after " ")	...	£810	2	1
1912 (" " ")	...	£687	18	2
1913 (" " ")	...	£758	4	9

The District comprises five parishes :—Thorne, Hatfield, Stainforth, Fishlake, and Sykehouse. The following table shows the populations as shown by the last five censuses, the number of inhabited houses at the census of 1911, and also the populations as estimated in the middle of 1913, with the Rateable Value in December, 1913.

POPULATION, RATEABLE VALUE, ETC.

PARISHES	Census 1871	Census 1881	Census 1891	Census 1901	Census 1911	No. of Inhab- ited Houses Census 1911	Aver- age No. of Per- sons per House	Esti- mated Popu- lation middle of 1913	Rateable Value Dec. 1913
THORNE ...	3371	3586	3556	3818	5289	1194	4.4	5094	£27,895
HATFIELD ...	1795	1806	1686	1606	1751	422	4.1	1779	14,346
STAINFORTH	748	735	644	735	816	207	4	1176	8,123
FISHLAKE ...	615	549	450	482	475	130	3.6	500	3,508
SYKEHOUSE	610	408	418	560	451	158	2.8	451	3,064
	7139	7084	6754	7201	8782	2111	4.1	9000	£56,936

I estimate the population of the District in the middle of 1913 at **9,000**, which is an increase of 390 on the population as estimated in the middle of 1912, and is 218 more than shown at the census of 1911. This is brought about by a big increase at Stainforth, which I estimate at 240, owing to increased activity at the Stainforth Colliery; an estimated increase of 125 at Thorne, and 25 at Fishlake. In Hatfield and Sykehouse the population has remained stationary. Since the middle of last year the population of Stainforth has still further increased, as, owing to a scarcity of houses at Askern, a number of miners working at the Askern Colliery, together with their wives and families, have come to live at Stainforth.

VITAL STATISTICS.

Births.—During the year **253** births (males 143, females 110) were registered in the District. This is the greatest number registered in any of the last 10 years, with the exception of the year 1911, when 260 were registered, and is equal to a birth rate of 28.1 per 1000 population. During the preceding year there were 228 births, with a birth rate of 26.48 per 1000 population. Two of the births, a male and female, both illegitimate, were treated by the Registrar General as “transferable,” and were allocated to the area in which the mother usually resides. No births were transferred into the District during the year.

The **nett** births are thus **251** (males 142, females 109), which gives a nett birth rate of **27.9** per 1000 population. This is 1.5 per 1000 better than the nett birth rate for the previous year, but is still considerably below the average rate for the previous ten years, which is 30.28.

Statistics show that the birth rate throughout the country has been gradually and steadily decreasing during the last decade.

The number of births and rates for the different parishes were as follows:—

Parish	Nett No. of Births 1913	Nett rate for 1913	Nett rate for 1912
Thorne ...	153 (m. 88, f. 65) ...	30·0 per 1000 ...	29·1 per 1000
Hatfield ...	38 (m. 21, f. 17) ...	21·36 „ ...	20·2 „
Stainforth ...	34 (m. 15, f. 19) ...	28·9 „ ...	30·0 „
Fishlake ...	13 (m. 10, f. 3) ...	26·0 „ ...	16·8 „
Sykehouse ...	13 (m. 8, f. 5) ...	28·8 „ ...	24·3 „

Eighteen (males 11, females 7) of the births were illegitimate, which is equal to 7·1% of the total births. Six of these were born in the Workhouse Infirmary and two of the mothers were non-residents in the District. The illegitimate birth rate in the District has gradually increased of late years, the rates for the last five years being:—

1909—4%	1911—6·15%	1913— 7·1%
1910—5·3%	1912—7%	

The birth rate for Rural England and Wales in 1913 was 22·3 per 1000 population, so it will be seen that the birth rate in this District is very considerably greater than the average for similar areas.

The birth rates for the previous 10 years are shown on Table V.

The administration of the Midwives' Act, 1902, is undertaken by the County Sanitary Authority.

Deaths.—The total number of deaths registered in the District during 1913 was 153 (males 72, females 81), compared with 136 during the previous year, and 163 during 1911. This gives a gross rate of 17·0 per thousand population, compared with 15·79 per 1000 in 1912, and 18·5 in 1911.

19, (12 males, 7 females) of these deaths occurred in the Union Workhouse (during 1912 the number was 10, and during 1911 it was 18); five of these (males 2, females 3) were non-residents, and 3 other deaths of non-residents (males 2, females 1) occurred in the District during the year. 9 (males 4, females 5), deaths of residents occurred outside the District, and were “transferred” by the Registrar General. The corrected or **nett** mortality is therefore 15·4 (males 72, females 82) compared with 133 in the previous year, and 160 in 1911, and is equal to a mortality rate of 17·1 per 1000 population, compared with 15·44 in 1912, 18·2 in 1911, and an average of 16·46 for the last ten years

The number of deaths and the rates in the various parishes were as follows :—

Thorne	86 deaths.	Rate	16·88	per 1000 population.
Hatfield	31	„	17·42	„
Stainforth	23	„	19·55	„
Fishlake	6	„	12·00	„
Sykehouse	8	„	17·73	„

The average rates for the preceding 10 years are as follows :

Thorne	16·80	per 1000 population.
Hatfield	15·58	„
Stainforth	17·24	„
Fishlake	17·84	„
Sykehouse	14·12	„

The rate for Rural England and Wales for 1913 was 13·1 per 1000 population.

The average death rates for the previous two decades is as follows :—

Decade 1893 to 1902	...	16·77	per 1000 population.
Decade 1903 to 1912	...	16·46	„

From the above it will be seen that the death rate in the Thorne Rural District has not decreased much in the last 20 years, also that the rate is considerably above the rate for the Rural part of England and Wales as recorded by the Registrar General.

The **natural increase** of population, *i.e.* the excess of births over deaths, for the year was 97, compared with 94 in 1912, and 98 in 1911. The average natural increase for the five years 1908—1912, was 100, and for the years 1903—1908 was 110.

Only one death was uncertified during the year.

Seven inquests were held during the year in the District. The certificates of the Coroner were :—

- Suicide by drowning.
- Accidental suffocation.
- Accidental death from fall from train.
- Hæmorrhage from inattention at birth.
- Syncope from vomiting.
- Heart disease.
- Accidentally drowned.

Inquests were also held on three “residents” who died outside the District, and the Coroner’s certificates were :—

Found drowned.

Accidental fall from bicycle, fracture of skull.

Accidental fall from scaffold, fracture of skull.

30·7% of the total mortality occurred in children under five years of age, compared with 30% in 1912, 31·3% in 1911, and an average of 26·6% for the previous ten years.

35·29% of the total deaths occurred in persons of 65 years and upwards, compared with 43·6% in 1912, 34·3°/8 in 1911, and an average of 46·7°/8 for the preceding ten years.

Seventeen persons died at the advanced age of 80 years and upwards, compared with 25 in 1912, 20 in 1911, and an average of 18 for the previous ten years. One of these reached the extreme age of 102 years.

Infantile Mortality.—**37** children (males 18, females 19) under the age of one year died in the District during 1912, and the death of a female infant belonging to the District occurred outside the District. The **corrected** mortality is therefore **38** (males 18, females 20) compared with the same number in 1911, and 24 in 1912. This is equal to an infantile mortality rate of **151·4** per 1000 births. The rate for the previous year was 101·32, and for 1911 it was 147·2. For the preceding 10 years the average is 103·9.

The rate for Rural England and Wales for 1913 was **96** per 1000 births.

The question of the reduction of the infantile mortality rate has been very much to the front during the last few years.

The causes of infantile mortality may be classed under two heads: (1) those operating before the birth of the child, causing prematurity of birth or debility from birth, and (2) those operating after the birth of the child. Under the first heading may be mentioned poverty and want leading to insufficient food for the parents; uncleanness, overcrowding, and bad housing, all which affect the health of the pregnant mother. Under the second heading a chief cause of infantile mortality is faulty feeding causing diarrhœal complaints, and it is a well-known fact that breast-fed children have a much better chance of surviving than those fed by artificial means. The infectious diseases, such as measles and whooping cough, carry off many children each year, and, through ignorance or carelessness, mothers often needlessly expose their infants to infection by visiting houses where one or more of the inmates are suffering from some infectious complaint.

No one can be satisfied with the present deplorable sacrifice of infant life during the first year after birth, and some endeavour should be made to lessen this great loss of life, by adopting the Notification of Births' Act, and by the co-operation of a voluntary Children's Care Committee and Visiting Nurse with the Sanitary Authority.

Table IV. shows that 10 infants died under the age of one month, compared with 9 in the previous year, and 12 in 1911. The causes of death were:—Premature birth and debility from birth in eight, convulsions in one, hæmorrhage in one. Eight of these infants lived less than one week.

42 per cent. of the total infant mortality occurred during the first three months of life, compared with 60·8 per cent. in 1912, and nearly 80 per cent. occurred under the age of six months.

Six (males 2, females 4), of the infantile deaths were those of **illegitimate** children, twice as many as in 1912. This gives an illegitimate death rate of **333·3** per 1000 illegitimate births, compared with 151·4 per 1000 births, which is the death rate for legitimate children. It will thus be seen that the death rate for illegitimate children is more than twice as heavy as that for legitimate children, and this is partly accounted for by the fact that illegitimate children are frequently put in charge of "foster-mothers," and are bottle-fed. In the Workhouse where all the mothers have breast-fed their babies, there has not been an infantile death during the last forty years of a child born there.

Heart Disease.—16 deaths (males 8, females 8) were certified during the year as having been caused by heart disease; this is the same number as in 1912, compared with 10 in 1911. This is equal to a mortality rate of **1·77** per 1000 population. The average rate for the preceding ten years is 1·69 per 1000 population. Eight of these deaths occurred in persons of 65 years or over, and seven in persons between the ages of 45 and 65.

Cancer caused the deaths of **9** persons (males 2, females 7) and this is equal to a mortality rate of **1·0** per 1000 population. During 1912, the deaths from this disease numbered seven and in 1911 the deaths were eight in number. It will be noticed that the great majority of the victims were females. During the last two years 13 females and 3 males have died from this deadly disease. The average rate for the preceding 10 years is **1·15** per 1000 population.

Bronchitis and Pneumonia.—These diseases accounted for 16 deaths (males 8, female 8) during the year under review. This is equal to a mortality rate of 1·77 per 1000 population, compared with 2 per 1000 in 1912, and 3·07 in 1911; while the average for the preceding ten years is 2·35.

Seven of the deaths occurred in children under the age of five years, and seven in persons of 65 and upwards.

Zymotic Mortality —16 deaths were certified under this head, viz.:—Whooping Cough, 8; Epidemic Diarrhœa and Enteritis, 6; Diphtheria, 1; and Measles, 1. This is three less than in 1912, and gives a Zymotic death rate of 1·77 per 1000 population, compared with 2·2 in 1912 and 3·4 in 1911, and an average of 1·37 in the preceding decade.

The rate for Rural England and Wales in 1912 was ·8. The Zymotic death rate is therefore more than double that for Rural England and Wales, and greater, even, than the Zymotic death rate of the 96 largest towns (1·5).

The cause of the big Zymotic death rate was the prevalence of Whooping Cough in the third quarter of the year, when seven deaths from this disease were recorded, and Epidemic Diarrhœa in the last four months, when five of the six deaths took place.

The deaths were distributed throughout the year as follows:

	Jan.	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Diarrhœa	1	—	—	—	1	2	1	1
Whooping Cough	—	1	4	2	1	—	—	—
Measles	—	—	1	—	—	—	—	—
Diphtheria	—	—	—	—	—	—	—	1

Epidemic Diarrhœa accounted for 6 deaths during the year, and 4 of these were under the age of six months; this is two less than in the previous year, and twelve less than in 1911. In my report for 1911 I stated that the house-fly is one of the chief factors of diarrhœal diseases, and that it breeds on decomposing organic matter, such as in manure heaps, middens, &c.

In July last the Local Government Board issued a circular reminding the Council of the importance of taking all practicable measures for the prevention of Epidemic Diarrhœa and other infectious diseases of infants, and drawing the Council's attention to the danger to health caused by accumulations of refuse in the neighbourhood of dwellings, which provide breeding grounds for flies, and are otherwise open to serious objection, and stating the necessity that there should be arrangements for the efficient and frequent removal of house, stable, and street

refuse, and the contents of privies and other closets on the conservancy system, and for the disposal of refuse and excrement under sanitary conditions.

They also urge those Councils who have not already done so, to adopt the Notification of Births' Act, 1907, by means of which the Medical Officer of Health receives information of the birth of a child within 36 hours, and steps can be taken, by means of advice, oral and printed, to prevent infectious diseases of infancy, including those arising in connection with improper feeding. The West Riding County Council have decided to adopt the Act in those Districts in the County where it is not already in force.

Infectious Diseases (Notification) Act, 1889.—118 notifications were received during the year, compared with 56 in the previous year, and 103 in 1911. This is the greatest number received in any year since the Act came into force, and this is partly accounted for by the fact that last year all kinds of Tuberculosis became notifiable, and 49 cases were notified under this head. This gives an infectious (notifiable) case rate of 13·1 per 1000 population. The average number of notifications received in the previous ten years is 39.

The notifications were as follows:—Scarlet Fever 40, Pulmonary Tuberculosis 25, other forms of Tuberculosis 24, Erysipelas 16, Diphtheria 9, Enteric Fever 4.

It is pleasing to note that no notification of Puerperal or child-bed Fever was received during the year.

13 of the cases which were notified during the year (Tuberculosis 15, Diphtheria 1) ended fatally, while seven other persons previously notified, died from Tuberculosis.

54 of the cases occurred in Stainforth, 44 in Thorne, 12 in Hatfield, 5 in Fishlake, and 3 in Sykehouse.

The cases were distributed throughout the year as follows:

	Ja.	Fb.	Mr.	Ap.	My.	Ju.	Jy.	Au.	Sp.	Oc.	No.	De.	Tot.	Fatal	R'm'd to Hospital	
Diphtheria	-	—	1	—	—	1	—	—	3	2	—	—	2	9	1	1
Erysipelas	-	1	—	—	2	1	2	2	—	2	1	—	5	16	—	—
Scarlet Fever	-	1	—	1	—	4	1	3	—	4	8	13	5	40	—	19
Enteric Fever	—	1	—	—	2	—	—	—	—	—	1	—	4	—	—	1
Pulmonary Tuberculosis	-	3	1	—	1	4	4	1	2	3	1	—	5	25	5	—
Other forms of Tuberculosis	-	—	6	—	2	3	2	—	1	1	4	3	2	24	10	—
Totals	-	5	9	1	5	15	9	6	6	12	14	17	19	118	16	21

The present Infectious Hospital for the District is situated about two miles from Thorne. It is a converted farm house, and was opened for patients in 1903. Since its opening, up to the end of 1913, 88 cases have been treated there, viz.:—Small pox 6, Enteric Fever 24, Diphtheria 23, Scarlet Fever 32, Measles 3. Only three of these cases (Enteric Fever 2, Diphtheria 1) ended fatally, and these three were in a moribund condition on admission.

During the year under review, 21 cases (Scarlet Fever 19, Enteric Fever 1, Diphtheria 1) were received into the Hospital, which contains five beds. All the cases made a good recovery, and were discharged well and free from infection.

The average stay in Hospital of the Scarlet Fever cases was 37·5 days.

The Diphtheria case was treated with anti-diphtheritic serum.

A portable steam disinfecter is provided at the Hospital in which clothing, blankets, etc., from the Hospital and from infected houses are sterilized. A cab is at present utilized to carry infectious patients to the Hospital.

During the year less opposition was met with, on the part of the parents, to children suffering from infectious diseases being removed to the Isolation Hospital, and during part of the year the resources of the Hospital were taxed to the utmost on account of an extensive outbreak of Scarlet Fever in the Parish of Stainforth, from which place 19 cases were removed to Hospital.

In the near future the Authority will have to consider the problem of a larger Isolation Hospital, to cope with the rapid increase of population which will take place when the sinking at the collieries is completed.

Bacteriology—During the year 33 specimens (Sputum for Tuberculosis 18, Throat Swabs for Diphtheria 14, Urine for Tuberculosis 1), were sent to the County Public Health Laboratory at Wakefield, compared with 15 specimens in 1912, and 8 in 1911. Seven of these (Tuberculosis 5, Diphtheria 2), proved positive. Facilities for bacteriological examinations, and diphtheria antitoxin are provided free to the Medical Men in the District on application being made to me.

TUBERCULOSIS.

Tuberculosis of the Lungs caused the deaths of 10 persons, compared with 3 in 1912, and 5 in 1911, which is equal to 2

mortality rate of 1·1 per 1000 population, compared with ·84 in 1912. The average rate for the preceding ten years is ·79 per 1000. 12 persons also died from other forms of Tuberculosis, and the Tuberculosis (all forms) mortality rate is therefore 2·44 per 1000 population.

By the Public Health (Tuberculosis) Regulations, 1911, which came into force on January 1st, 1912, Pulmonary Tuberculosis was made a compulsorily notifiable disease among all classes, while the Public Health (Tuberculosis) Regulations, 1912, which came into force on February 1st, 1913, made all forms of Tuberculosis compulsorily notifiable.

Under these Regulations 49 cases were notified during the year; 25 of these being Pulmonary and 24 non-Pulmonary.

Table II. shows that 28 of the cases (Tuberculosis of Lungs 16, other forms 12) occurred at Thorne; 13 (of Lungs 4, other forms 9) at Stainforth; 5 (of Lungs 3, other forms 2) at Hatfield; and 3 (of Lungs 2, other forms 1) at Fishlake, while no notification was received from Sykehouse.

Of the Pulmonary cases, 15 were those of males and 10 of females. Of the non-Pulmonary cases, 9 were males and 15 females.

On receipt of notifications, visits are made to the patients' houses and any faulty housing conditions are brought to the notice of the owners and tenants. Efforts are made to ascertain the existence of unrecognized cases in the infected households. Verbal and written warnings are given of the danger from infection to other inmates of the infected house, and directions are given as to avoidance of infection. The Inspector has, for distribution, illustrated leaflets showing, in simple form, how to avoid infection. Pamphlets, stating the precautions to be observed against the spread of the disease, are displayed in public places.

Disinfectants are provided free to patients for sputum and other purposes, and on death or removal the room occupied by the patient is disinfected with the Formalin Spray.

At the Workhouse an open-air shelter is provided for cases of consumption occurring amongst pauper patients, and open-air verandas have been erected in connection with two wards (male and female).

The West Riding Insurance Committee have made arrangements for the treatment in Sanatoria of insured persons who

may be suffering from Pulmonary Tuberculosis in the early stages, and since the beginning of 1914 a branch Tuberculosis Dispensary has been opened by the County Authority at Thorne, where a Tuberculosis Medical Officer attends twice weekly and gives treatment, by Tuberculin and otherwise, to any person suffering from Tuberculosis. Doubtful cases are also admitted to the Doncaster Tuberculosis Dispensary, where there are beds for observation purposes.

Scarlet Fever.—40 cases of Scarlet Fever were notified in this District during the year. 32 of these occurred in Stainforth, 5 in Thorne, 2 in Sykehouse, and 1 in Fishlake. 27 of these occurred in children of school age (*i.e.* between the ages of 5 and 15).

The first case occurred in January at Stainforth and on investigation no origin could be discovered. The second case occurred in Thorne, and was notified in March. Four cases were reported in May (two in Thorne and two in Stainforth); one occurred in June and three in July, all at Stainforth; four in September (2 at Stainforth, 2 at Sykehouse); eight cases in October (7 at Stainforth, 1 at Fishlake); in November 13 cases, all at Stainforth, and in December 5 cases (3 at Stainforth, 2 at Thorne). None of the cases ended fatally.

19 of these cases were removed to the Isolation Hospital, where the average stay was 37·5 days.

On January 7th I made a special report on the outbreak at Stainforth, when I stated that there was little doubt that attendance at Day and Sunday schools was the main factor in spreading the disease. The school was visited on several occasions and all the children present were inspected, and one child was found to be peeling on hands and neck. The teachers were warned to exclude from school children who were suffering from sore throat, and report suspicious cases of peeling.

Prompt removal of as many cases as possible to the Isolation Hospital, together with immediate disinfection of infected houses, and disinfection of school class-rooms, put an end to the epidemic.

Diphtheria.—9 cases of Diphtheria were notified during the year, and 8 of these occurred amongst children of school age (*i.e.* between 5 and 15 years), the other patient being the mother of three of the infected children.

Seven of the cases occurred at Stainforth and two at Thorne, and one of the former ended fatally. Four of the cases in Stainforth occurred in one house. The first case occurred in

February and was at once removed to the Isolation Hospital, where the patient was treated with anti-diphtheritic serum. The second case occurred in May, three cases in August, two in September, and two in December. Owing to the Hospital being occupied with Scarlet Fever cases, none of these cases were removed to Hospital.

Vaccination.—The following Table shows the number of infants successfully vaccinated, and the number for whom “conscientious” objection exemptions were obtained, irrespective of date of birth, during the years 1906—1913:—

		Year	No. Vac- cinated	No. of conscientious exemptions	
Thorne Rural District	}	1906	176	13	
		1907	181	9	
		1908	115	52	
		1909	129	70	
		1910	126	95	
		1911	130	87	
		1912	120	89	
		1913	102	107	

It will be seen from this Table that there is an ever increasing proportion of the population which will be susceptible to the infection of Small Pox, whenever an outbreak of that disease occurs in the District.

It cannot be too frequently reiterated that successful primary and re-vaccination are the one and only protection in the presence of an outbreak of Small Pox.

Enteric Fever.—Only 4 cases of this disease were notified during the year, compared with 8 in 1912 and 54 in 1911, and none of them ended fatally.

The first case occurred during February at Thorne Waterside, in a boy eight years of age. On investigation it was found that the boy drank water from the River Don, and a case of Enteric Fever occurred in the same house in 1911. The second case was reported in May, and the patient resided in Bridge-street, Thorne. The man, aged 57, sickened while working at Selby, where he drank the town's water, while at home he drank water from a shallow well on the premises.

The third case also occurred at Thorne, the patient being a keelman, aged 59, who sickened on board his keel. He drank unboiled canal water. This patient was removed to the Isolation Hospital. The last case was reported from Hatfield, and it was found that the woman had been nursing Enteric Fever cases at Scunthorpe.

The Inspector visited all the infected houses and gave verbal and printed instructions for the safe disposal of excrement after previous disinfection. Disinfectants were supplied to the houses free of cost. Any defects or nuisances observed were ordered to be at once remedied.

Cerebro-Spinal Fever and Acute Poliomyelitis.—These two diseases were made compulsorily notifiable in September, 1912. No cases were notified in the District during the year.

Schools —Then are ten public Elementary Schools and one Grammar School in the District, and these were periodically visited during the year, when the heating, lighting, and ventilation arrangements were found satisfactory.

WATER SUPPLY.—At the THORNE PROVIDED INFANTS' SCHOOL a plentiful supply of good water is obtained from a deep bore and this water is used for drinking purposes at the MIXED SCHOOL where rain water is stored for washing purposes.

Water for the MOORENDS SCHOOL is also got from a deep bore.

At the THORNE TRAVIS' and HATFIELD TRAVIS' SCHOOLS stored rain water is used for both washing and drinking.

At BLACK BULL SCHOOL water is obtained from a tubed well 12 feet deep.

At MEDGE HALL SCHOOL rain water is stored in two tubs which were without covers when last inspected and the teacher complained that the water was not fit for drinking purposes.

At the HATFIELD WOODHOUSE, STAINFORTH, and FISHLAKE SCHOOLS the water is obtained from shallow wells, the Fishlake School supply being supplemented by stored rain water.

During the present year the GRAMMAR SCHOOL has been supplied with water from the new public supply.

On June 26th, the Infant Department of the Thorne Council School was closed for a fortnight by the Education Committee on account of bad attendance due to the prevalence of Whooping Cough and Measles.

In the last four months of the year several cases of Scarlet Fever occurred among scholars attending the Stainforth School but it was not thought necessary to close the school. The schools were thoroughly disinfected.

Several cases of Measles also occurred amongst children attending the SYKEHOUSE SCHOOL, and several children attend-

ing the MOORENDS SCHOOL suffered from Whooping Cough at the time that it was prevalent among scholars attending the Thorne Infants' School.

Dairies, Cowsheds, & Milk-shops Orders of 1885 and 1889.—There are 19 registered milk-sellers in the District, which is one less than at the end of the previous year, and four less than in 1911. Fifty inspections of these were made during the year.

All the occupiers have received printed instructions, pointing out the great necessity of keeping the bodies of the cows, especially the udders, clean and free from caked manure; and also that the hands and the clothing of the milkers should be clean, and that special attention should be paid to the cleansing of the vessels used for storing the milk, in order to prevent, as far as possible, its contamination. It is to be feared that little attention has, in the past, been paid to these instructions.

No instance of disease, excluding infantile diarrhoea, was attributed to milk during the year.

There are 23 cowkeepers in the District, and 25 cowsheds. The same number as in 1912. All owners and occupiers of cowsheds situated within the area served by the new Public Water supply should avail themselves of this boon.

On May 1st, 1913, the Tuberculosis Order 1913, under the Diseases of Animals' Act, came into force, by which any person in possession of any cow which is, or appears to be, suffering from Tuberculosis of the Udder, or other chronic disease of the Udder, or any bovine animal suffering from Tuberculosis with emaciation, must without delay give information of the fact to the Police, and the owner receives compensation if it is thought necessary to destroy the animal. Under this order, during the year, one cow was reported as suffering from Tuberculosis with emaciation.

Slaughter-houses.—17 slaughter-houses were on the register at the end of 1913, the same number as in the previous year. 64 inspections of these were made during the year, and on each occasion they were found in a satisfactory state. In accordance with the Bye-laws they were periodically limewashed.

From time to time in my annual reports I have advocated the provision of a public slaughter-house or abattoir. Under the present system of private slaughter-houses, where slaughtering is done at irregular intervals—sometimes late at night—the Sani-

tary officials have little chance of being present at the time of slaughtering, so as to examine the carcase and organs, and, further, there is reason to believe that animals intended for human consumption are sometimes slaughtered on unlicensed premises. The consequence is that a large proportion of the meat is exposed for sale without any previous inspection by the Sanitary officials.

In the killing of pigs the practice in this District is to cut their throats without any preliminary stunning, and the squeals of the dying pig can be heard at a considerable distance from the slaughter-house. It would be much more humane to first stun the pigs, a practice followed out in some localities, as also on the Continent.

It is very important that the owners of all slaughter-houses situated in Thorne and Hatfield should take advantage of the public water supply. By having an unlimited supply of good water at their disposal they would be able to keep the slaughter-houses in a more efficient state of cleanliness than hitherto.

During the year under review no cases of illness, suspected to be due to food poisoning, came to my knowledge.

Five cases of fish were seized by the Inspector as being unfit for human consumption.

No samples were taken for examination under the Food and Drugs' Act.

Bakehouses.—At the end of 1913 there were 5 bake-houses on the register, compared with two at the end of 1912. All these were inspected during the year, and one of them was found to be without proper ventilation, and this defect was only remedied. The other bakehouses were found to conform to the Bye-laws.

Common Lodging Houses.—There are 3 of these in the District, two situated in Thorne and one at Stainforth. These were periodically inspected during the year, and on each occasion were found in a clean condition and conforming to the Bye-laws.

Canal Boats.—At the end of 1913 there were 159 Canal Boats on the register, two more than at the end of 1912, and 147 of these are at present in use. 41 of these were inspected during the year, and they were found in a satisfactory condition, and no over-crowding was observed.

Factory and Workshops' Act, 1901, sec. 132.—Including 5 bakehouses there are 45 workshops and 28 factories on the register. All were inspected during the year, and on the request of the Inspector three premises were limewashed, and one defective closet was repaired. In the other cases the factories and workshops conformed to the Bye-laws. The factories are—Flour mills 5, Boat-building 4, Brick and Tile-making 3, Moss-litter making 3, Brewing 2, Collieries 2, Joiners' shop, Cycle works, Engineering, Printing, Tar distilling, Smithy, Cattle Cake works, Gas Works, Pork butcher's works, one each.

There is only one out-worker in the District, and the statutory regulations were complied with by his employer.

No offensive trades are carried on within the District.

Scavenging.—In all the Parishes, with the exception of Thorne, the Scavenging is done by the owners and occupiers and the refuse is placed, without any previous treatment, on the land. In Thorne, during 1913, the scavenging was done by contract, at a cost of £135 per annum, and many complaints were received by the Inspector that the contractor did not properly carry out the work, and the Inspector reported this to the Council. At the present time the scavenging is done by the Council and is carried out satisfactorily.

Sewerage and Sewage Disposal—There is no treatment of Sewage in any part of the District. At **Thorne** it is discharged at various points into the Boating Dyke which runs into the River Trent. Owing to the very small fall, the solid matter does not get quickly away, and in great part becomes deposited upon the bottom within the limits of the Parish. This Dyke is periodically flushed from the Canal. The sewage from the north-east end of the town is discharged into the Black Drain and that from the houses at Waterside into the River Don. Special attention was given to the Boating Dyke during the year, and also to the sewage disposal at the north-east end of Thorne, and the dykes have been kept in as good a condition as possible.

At the OTHER VILLAGES the sewage is discharged, as a rule, into the nearest water courses. The sewage from some of the houses at Stainforth and Fishlake flows into the River Don.

Part of the Sewage Dykes at HATFIELD have been cleansed and the remaining portion will be completed during the present year. At STAINFORTH, FISHLAKE, and SYKEHOUSE the dykes have been cleansed as usual.

A scheme for the adequate sewerage and sewage disposal has been completed for Thorne, and is awaiting further developments at the Colliery before being put into execution. In my opinion it is time a similar scheme should be taken in hand for Hatfield and Stainforth, where there will be a large increase of population in the near future.

Closet Accommodation.—The closet accommodation in the District mostly comprises privies and ashpits, but these are gradually being superseded by box closets. During the year 54 box closets and 6 water closets were added to old property, and 12 privies were converted into box closets.

Now that Thorne and Hatfield are provided with a proper water supply more water closets will probably be erected.

28 new box closets were constructed for new houses during the year. At the end of the year the closet accommodation of the District was as follows:—

Privies with open middens	...	...	15
Privies with covered middens	...	...	1400
Pail or tub closets	...	...	650
(556 in Thorne)			
Water closets	...	...	32

Water Supply.—I am pleased to report that the private company which obtained Parliamentary powers to supply Thorne, Hatfield, Stainforth, and Fishlake with water have now laid the mains from the pumping station near Hatfield, along the Doncaster and Thorne main road, through Hatfield to Thorne, and the mains have been laid in all the Thorne streets. At the end of the year the water had been supplied to 110 houses in Thorne and 9 in Hatfield, and many more houses in Thorne have been supplied with the water since the beginning of the year. The number of inhabited houses in Thorne and Hatfield, as shown by the Census of 1911 was 1616.

The following is an abstract from the report of Mr. Fairley, of Leeds, who analysed a sample of the water:—

The sample contains in grains per gallon (parts per 70,000):

Chlorides equivalent to common salt	...	...	3.00
Nitrates equivalent to calcium	...	...	1.56
Nitrites, none			
Phosphates, none			

Sodium, Calcium, Magnesium Carbonates	...	7.00
Sodium, Calcium, Magnesium Sulphates	...	5.80
Volatiles and organic matter (lost by careful ignition)	... ..	1.40
Containing chlorine	1.82; Nitric acid,	1.20
Lead, none		
Hardness, 8.80 : after boiling,	5.00	
Free ammonia,	0.001 ; albuminoid,	0.001
Proteids, none		
Sediment, very minute		
Microscopic examination	does not show the presence of animalculae	

This analysis shows the water to be of good quality, very soft, and suitable for the purpose of a public supply, and it is to be hoped that the inhabitants of Thorne and Hatfield will substitute this water for that from the canal and from shallow wells for drinking and other purposes, as the water from the latter sources has been proved to be polluted.

Housing.—At present there is no special activity in house building in the District, and there is a sufficiency of housing accommodation for the requirements of the population.

During the year nine houses were built at Thorne and sixteen at Stainforth, and two houses and shops and one shop were erected at Thorne, and two lock-up shops at Stainforth. One stable was built at Thorne, and an addition made to one house at Sykehouse. No building was done at Hatfield and Fishlake.

The amended Bye-laws for Streets and Buildings were in force during the year, and a better class of house was built. All the houses built were for the working classes. Plans were approved for 2 shops, 11 working class houses, and 3 houses and shops, also for 2 estates and for one alteration.

HOUSING, TOWN PLANNING, ETC., ACT, 1909.

Number of Houses inspected	95	9	Houses found satisfactory on inspection.			Action under section 15				Action under section 17					Houses with defects not disposed of at end of 1913			General character of defects found
						Houses found not reasonably fit for human habitation	Houses for which notices were given to execute work	Houses in respect of which notices were satisfactorily complied with	Houses found to be totally unfit for habitation	Representations made to L.O. for closing orders	Number of closing orders made	Houses made fit for human habitation without closing orders	Houses closed voluntarily	Houses for which demolition orders were made	Houses not reasonably fit for human habitation	Houses with minor defects	Houses totally unfit for human habitation	
	84	84	84	84	68	2	NIL	NIL	NIL	2	NIL	NIL	2	NIL	16	16	NIL	(a) Defective roofs and spouting. (b) Untrapped or no drains (c) Insanitary ash pits (d) Insufficient closet accommodation (e) Defective paving of yards (f) Windows that would not open

A permanent record is kept of the number and size of rooms, occupants and sanitary conditions, both inside and outside, found at the time of inspection, and the record of the previous four weeks' inspection was presented at each monthly meeting of the Council. The general condition of the houses was fairly satisfactory and very little over-crowding was observed.

Adoptive Acts, &c.—The following Adoptive Acts are in force in the District:—

Act	Date of Adoption	
Public Health Acts Amendment Act, 1890	...	1891
Infectious Diseases Prevention Act, 1890	...	1891

The following Bye-laws and Regulations are in force in the District:—

Bye-laws	Date of Adoption	
Private Scavenging	1883
Prevention of Nuisances	1877
Common Lodging Houses	1883
New Streets and Buildings	1894
„ „ (amended)	...	1912
Slaughter Houses	1883
Regulations under Dairies, Cowsheds, and Milkshops' Order	1900

A summary of the annual report of the Sanitary Inspector; also tables of mortality and sickness and rainfall, are appended.

I am, Gentlemen,

Your obedient Servant,

H. W. ARBUCKLE, M.D., D.P.H.,

Medical Officer of Health.

THORNE,

MARCH 26TH, 1914.

TABLE I.—VITAL STATISTICS of whole District during 1913 and previous years.
THORNE RURAL DISTRICT.

Year	Popula- tion estima- ted to middle of each year	BIRTHS.			Total Deaths registered in the District		Transferable Deaths		Nett Deaths belonging to the District.			
		Uncor- rected No.	Nett		No.	Rate	-of Non- resi- dents regis- tered in the Dis- trict.	of Resi- dents not regis- tered in the Dis- trict.	Under 1 year of age		At all ages	
			No.	Rate					No.	Rate	No.	Rate
1908	7333	201	201	27·4	121	16·5	12	4	13	65	113	15·4
1909	7583	236	236	31·1	135	17·8	16	4	21	88	123	16·2
1910	7783	243	243	31·2	141	18·1	13	7	21	86	135	17·3
1911	8782	260	258	29·37	163	18·5	13	10	38	147·2	160	18·2
1912	8610	228	227	26·36	136	15·79	7	4	23	101·32	133	15·44
1913	9000	253	251	27·9	153	17·0	8	9	38	151·4	154	17·1

Area of District in) acres (land and inland water)	Total Population at all ages			... 8782 } at		
	Number of Inhabited Houses			... 2111 } census		
	Average number of persons per house			... 4·1 } 1911		
				... 4·1 }		

TABLE II.
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1913.
THORNE RURAL DISTRICT.

Notifiable Disease.	Number of cases notified.								Total cases notified in each Parish in the District.					Total cases removed to Hospital.	
									Fatal Cases						
	At all ages	Under 1 year	1 and under 5 years	5 and under 15 years	15 and under 25 years	25 and under 45 years	45 and under 65 years	65 years and upwards	Thorne	Hatfield	Stainforth	Fishlake	Sykehouse		
Diphtheria	9	...	8	...	1	7	...	...	2	...	7	...	...	1	1
Erysipelas	16	...	2	1	...	...	3	3	6	6	2	1	1	...	...
Scarlet Fever	40	...	32	4	1	...	...	...	5	...	32	1	2	...	19
Enteric Fever	4	...	1	...	...	1	2	...	3	1	...	...	...	...	1
Pulmonary Tuberculosis	25	1	6	4	4	9	5	...	16	3	4	2	...	5	...
Other forms of Tuberculosis	24	6	5	5	2	3	2	1	12	2	9	1	...	10	...
Totals	118	7	8	54	11	22	12	4	44	12	54	5	3	16	21

TABLE III.

CAUSES OF, AND AGES AT DEATH DURING
THE YEAR 1913.

THORNE RURAL DISTRICT.

Causes of Death.	Nett Deaths of "Residents" occurring within or without the District									Total deaths of residents or non-residents in Institutions in the District
	All ages	Under 1 year	1 and under 2 years	2 and under 5 years	5 and under 15 years	15 and under 25 years	25 and under 45 years	45 and under 65 years	65 years and upwards	
All cases { Certified ..	153	38	5	4	4	3	17	28	54	19
Uncertified ..	1		...	...	...	...	...	1	...	...
Measles	1	...	1	...	...	...	...	...	...	...
Whooping Cough	8	6	2	...	...	...	...	...	...	...
Diphtheria	1	...	...	...	1	...	...	...	...	...
Influenza	2	...	...	...	...	...	...	1	1	...
Pulmonary Tuberculosis...	10	1	...	...	2	2	4	3	...	4
Tuberculous Meningitis...	2	...	...	...	2	...	...	...	...	...
Other Tuberculous Diseases	10	6	...	1	...	...	1	1	1	1
Cancer, Malignant Disease	9	...	...	...	...	1	1	3	5	1
Organic Heart Disease ...	16	...	...	...	...	1	...	7	8	2
Bronchitis	7	4	...	...	...	...	...	...	3	...
Pneumonia (all forms) ...	9	1	1	1	...	...	1	1	4	3
Other Respiratory Diseases	5	...	...	2	...	...	...	3	...	...
Diarrhœa and Enteritis ...	6	5	1	...	...	...	...	...	...	...
Cirrhosis of Liver	2	...	...	...	...	...	...	1	1	...
Nephritis and Bright's Disease	2	...	...	...	...	...	1	1	...	...
Congenital Debility, Premature Birth	12	12	...	...	...	...	...	...	...	...
Diseases of Pregnancy & Parturition, excluding Puerperal Fever	1	...	...	...	...	...	1	...	...	...
Violent Deaths, excluding Suicide	6	2	...	...	1	...	2	1	...	...
Suicide	1	...	...	...	...	...	1	...	...	...
Other defined diseases ...	41	1	...	...	...	...	4	6	30	8
Ill-defined diseases	3	...	...	...	...	...	1	1	1	...
TOTALS	154	38	5	4	4	3	17	29	54	19

TABLE IV. THORNE RURAL DISTRICT. INFANT MORTALITY.

1913—Nett Deaths from stated causes at various ages under one year of age.

Causes of Death.		Under 1 week	1—2 weeks	2—3 weeks	3—4 weeks	Total under 4 weeks	4 weeks and under 3 months	3 months and under 6 months	6 months and under 9 months	9 months and under 12 mos.	Total Deaths under 1 year.
All causes	{ Certified Uncertified	8 ...	1 ...	... ...	1 ...	10 ...	6 ...	14 ...	2 ...	6 ...	38 ...
Whooping Cough	...	...	...	...	...	...	...	4	1	1	6
Abdominal Tuberculosis	...	...	...	...	...	...	1	3	...	1	5
Other Tuberculosis Diseases	...	...	...	...	...	...	...	...	1	1	2
Convulsions	...	1	...	...	...	1	...	...	...	...	1
Bronchitis	...	...	...	...	...	...	1	2	...	1	4
Pneumonia (all forms)	...	...	...	...	...	...	...	1	...	...	1
Diarrhoea	...	...	...	...	...	...	...	1	...	...	1
Enteritis	...	...	...	...	...	...	1	2	...	1	4
Premature Birth	...	5	1	...	...	6	1	...	...	...	7
Debility	...	1	...	...	1	2	2	1	...	...	5
Other causes	...	1	...	...	...	1	...	...	...	1	2
TOTALS		8	1	...	1	10	6	14	2	6	38

Nett Births in the year	{ Legitimate Illegitimate	235 ...	16 ...	Nett Deaths in the year of	{ Legitimate Infants Illegitimate	32 ...	6 ...
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TABLE V. TABLE OF BIRTH AND MORTALITY RATES.

Thorne Rural District	Per 1000 Population							Per 1000 Births
	Nett Birth Rate	Nett Death Rate	Phthisis Death Rate	Bronchitis and Pneumonia Death Rate	Heart Disease Death Rate	Cancer Death Rate	Zymotic Death Rate	Infant Mortality Rate
1903	34.3	18.6	1.1	4.1	1.8	.97	.8	161
1904	30.3	13.9	.96	1.79	1.1	1.5	1.5	109
1905	32.4	16.29	.41	1.78	2.05	.95	.68	101
1906	30.1	18.89	1.36	2.4	1.5	2.19	1.09	100
1907	30.3	14.37	1.09	2.19	1.36	.68	.68	81
1908	27.4	15.4	.81	1.6	2.3	.95	.95	65
1909	31.1	16.2	.92	2.2	2.3	1.05	1.05	88
1910	31.2	17.3	.38	2.4	1.77	1.28	1.4	86
1911	29.37	18.2	.57	3.07	.91	1.14	3.4	147.2
1912	26.36	15.44	.34	2.0	1.85	.81	2.2	101.32
Average for 10 years	30.28	16.46	.79	2.35	1.69	1.15	1.37	103.9
1913	27.9	17.1	.55	1.77	1.77	1.0	1.77	151.4
Rural Eng- land and Wales, 1913	22.3	13.1	?	?	?	?	.8	96

Summary of Sanitary Inspector's Annual Report, 1913

Sewers cleansed	...	...	...	...	...	550 yards
Sewers extended	...	..	...	..	...	60 yards
Blocked Drains cleansed	...	...	...	...	...	10
Sink Waste trapped	...	...	...	...	...	11
Pig-sty nuisances abated	...	...	...	...	...	3
Manure heap nuisances abated	...	...	...	...	...	2
Fish-frying nuisances abated	...	...	...	...	...	2
Slaughter-houses cleansed and lime-washed	...	...	...	...	...	17
Cowsheds cleansed and limewashed	...	...	...	...	...	25
Workshops and Factories cleansed and limewashed	...	...	...	...	...	70
Bakehouses cleansed and limewashed	...	...	...	...	...	5
Schools disinfected	...	...	...	...	...	3
Wells cleansed	...	...	...	...	...	5
Number of Nuisances abated	...	...	...	...	...	84
„ Verbal Notices given	...	...	...	...	...	36
„ Written notices given	...	...	...	...	...	52
„ Nuisances unabated	...	...	...	...	...	4
„ Slaughter-houses on Register	...	...	...	...	...	17
„ Factory and Workshops on Register	...	...	...	...	...	73
„ Cowsheds on Register	...	...	...	...	...	19
„ Common Lodging Houses on Register	...	...	...	...	...	3
„ Canal Boats on Register	...	...	...	...	...	159
„ New Box-closets erected	...	...	...	...	...	54
„ Privies and Ashpits converted into Box-closets	...	...	...	...	...	12
„ Houses repaired	...	...	...	...	...	77
„ Ashpits abolished	...	...	...	...	...	12
„ Drains put in order	...	...	...	...	...	23
„ Houses inspected	...	...	...	...	...	95
„ Houses and Shops built	...	...	...	...	...	30
„ Artesian Wells sunk	...	...	...	...	...	2
„ Foundations inspected	...	...	...	...	...	30
Plans approved—Houses	...	...	...	...	...	14
„ Shops	...	...	...	...	...	2
„ Additions	...	...	...	...	...	1
„ Building Estates	...	...	...	...	...	2

HAROLD PLEWES,

Sanitary Inspector.

Rainfall at Thorne in 1913.

Months.		Total in month. ins.		Max. rainfall in one day. ins.		No. of wet days.
January	...	2·23	...	·60	...	16
February	...	·56	...	·22	...	13
March	...	1·82	...	·28	...	21
April	...	2·12	...	·51	...	15
May	...	1·72	...	·63	...	10
June	...	·78	...	·24	...	13
July	...	·29	...	·10	...	7
August	...	·81	...	·66	...	5
September	...	2·26	...	·88	...	14
October	...	2·10	...	·42	...	16
November	...	1·71	...	·25	...	24
December	...	1·18	..	·29	...	12
<hr/>						
Grand Total	...	17·58	...			166
<hr/>						

H.W.A.

This is the lowest yearly rainfall recorded in the District during the last 20 years with the exception of 1905, when the total rainfall was 16·21 inches.